TO THE INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY
EP/IPEA

Applicant: Sumitomo Chemical Co., Ltd.

International Application No.: PCT/US96/20415

International Filing Date: 27 December 1996

For: METHODS OF CONFERRING PPO INHIBITING HERBICIDE RESISTANCE TO PLANTS BY GENE MANIPULATION

AMENDMENTS TO THE INTERNATIONAL APPLICATION UNDER ARTICLE 34 PCT (RESPONSE TO WRITTEN OPINION)

VIA FACSIMILE - 011 49 89 2399 4465

European Patent Office
International Preliminary
Examining Authority
D-80298 Munich
Germany

23 February 1999

Sir:

In response to the Written Opinion mailed on 24 November 1998, Applicants have amended claim 35 as indicated on the attached replacement sheet of claims. The amendment does not go beyond the scope of the application as filed, as it merely introduces text to which reference is made in the claim.

ARGUMENTS IN FAVOR OF NOVELTY AND INVENTIVE STEP

Applicant has noted the Examiner's determination that the subject matter of claims 3 and 5-9 is considered novel and inventive. Applicant further notes that the Examiner appears to have taken overly broad interpretation of claims 1, 2, 4 and 10-25. The Examiner indicates that the term "biologically functional

equivalent" in the claims for some reason negates the limitation (2) in claim 1 that amino acid 13 of the PPO is substituted by another amino acid. Applicant submits that the limitations (1)-(3) in the claims apply to both "DNA fragment[s]" or "biologically functional equivalent[s]" thereof. The claim clearly states that the invention is a method wherein said DNA fragments or biologically functional equivalents are "expressed" and "ha[ve] the following characteristics:", listing limitations (1)-(3). Accordingly, Applicant submits that is it improper for the Examiner to ignore limitation (2) in claim 1 in his interpretation of the claims. As the Examiner indicates in paragraph 5 that limitation (2) is sufficient to confer novelty and inventive step upon claims 3 and 5-9, Applicant submits that claims 1, 2, 4 and 10-25 similarly should be considered novel and inventive.

In paragraph 6, the Examiner indicates that the reference D3 discloses methods for evaluating the inhibitory effect of compounds on PPO, comprising measurement of the growth of the RS-3 strain of *Chlamydomonas*. The Examiner indicates that such disclosure is novelty destroying for the subject matter of claims 26-40. Applicant submits that at least with respect to claims 27-35 and 37-40, the Examiner has overlooked the limitation that the organism is one created by introduction of foreign DNA encoding a PPO wherein at least Val13 has been substituted by another amino acid. Thus, these claims do not read upon a method wherein the RS-3 strain, which contains such a gene endogenously and not by

introduction, is used and therefore these claims should be considered at least novel over the reference D3.

COMMENTS UPON CERTAIN OBSERVATIONS ON THE INTERNATIONAL APPLICATION

The Examiner has criticized the wording in claim 1 on the basis that several terms are unclear. Applicants submit that the lack of clarity asserted by the Examiner results from his reading individual terms in isolation, rather than reading the claim as a whole. For example, the Examiner indicates that the term "homologous" is meaningless without an indication of the percentage of homology. However, the term "homologous" in limitation (2) is further limited at the end of that paragraph by the indication that the homology is such that it is detectable by hybridization. With respect to what it is that is detectable or identifiable, Applicant submits that the claim clearly states that it is the DNA fragment described by claim 1 that is detectable or identifiable by the "hybridization methods". Similarly, the Examiner indicates that by inclusion of the term "or part of a protein" the claimed DNA need not encode the Val13 amino acid mutation stated in limitation (2). However, this is clearly incorrect; the phrase at issue clearly states that the DNA fragment "encodes a protein or a part of a protein in which an amino acid corresponding to VAL13... is substituted by another amino acid." Finally, with respect to the term "DNA fragments", Applicant submits that that term is

explicitly defined in the specification at page 7, lines 32-36. Accordingly, the term is clear as used.

In view of the above amendments and arguments, Applicant earnestly solicits the issuance of a favorable International Preliminary Examination Report.

Respectfully submitted,

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